

W5YI

America's Oldest Ham Radio Newsletter REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable.

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February 15, 2001

ARRL Restructures, Raises Dues ...Changes Position on Morse Code

The Board of Directors of the American Radio Relay League (ARRL) held their annual meeting at the Dallas/Fort Worth Airport Marriott Hotel, in Irving, Texas, on Friday, January 19, and Saturday, January 20, 2001. The meeting was called to order by President Jim Haynie, W5JBP.

All fifteen Directors were present. (Bernie Fuller, N3EFN, Atlantic Division; George R. Isely, W9GIG, Central Division; Jay Bellows, K0QB, Dakota Division; Rick Roderick, K5UR, Delta Division; George Race, WB8BGY, Great Lakes Division; Frank Fallon, N2FF, Hudson Division; Wade Walstrom, W0EJ, Midwest Division; Tom Frenaye, K1KI, New England Division; Greg Milnes, W7OZ, Northwestern Division; James Maxwell, W6CF, Pacific Division; C. Dennis Bodson, W4PWF, Roanoke Division; Walt Stinson, W0CP, Rocky Mountain Division; Frank M. Butler, W4RH, Southeastern Division; Fried Heyn, WA6WZO, Southwestern Division; and Coy Day, N5OK, West Gulf Division.)

Also present Joel M. Harrison, W5ZN, First Vice President; Kay C. Craigie, WT3P, Vice President; John C. Kanode, N4MM, Vice President; Rodney J. Stafford, W6ROD, International Affairs Vice President; James McCobb, W1LLU, Treasurer; David Sumner, K1ZZ, Executive Vice President and Secretary, Chief Financial Officer Barry J. Shelley, N1VXY and General Counsel Christopher D. Imlay, W3KD.

Present as guests of the Board were Radio

Amateurs of Canada (RAC) President Ken Oelke, VE6AFO, and Federacion Mexicana de Radio Experimentadores (FMRE) President Pedro Mucharraz Gonzales, XE1PM. It was the first time that both the Canadian and Mexican presidents attended an ARRL Board meeting.

Follows are some of the more interesting actions take by the Board.

1. President Jim Haynie reported on an ARRL Education Project in Dallas, where seven schools are participating in a pilot program. The great enthusiasm among the kids spread to their parents and resulted in a separate Amateur Radio class for the adults. President Haynie completed 25 trips on behalf of ARRL during the year, and he plans to continue with an ambitious travel schedule in 2001 that includes at least one trip to each division.
2. Executive VP Dave Sumner's report began with a description of the important happenings during 2000 including the tremendous media coverage of Amateur Radio surrounding the tragic van Tuyl shooting incident; the 75th anniversary of the IARU; and travel both in country and abroad including the IARU Region 3 conference in Darwin, where the Morse Code issue was addressed.
3. Jim Haynie presented the Executive Committee report. He stressed that in his opinion, the inability of many Amateurs to erect an antenna represents one of the biggest problems in Amateur Radio

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right now and that the problem is going to get worse. Mr. Haynie will work diligently to convince Congressmen to support our efforts to convince the FCC to apply PRB-1 more broadly. The *Antenna Case Review and Assistance Committee* has not yet been presented with a case that meets the committee's requirements for funding.

4. The *Spectrum Strategy Committee* commented about the seriousness of the threats to Amateur frequencies—especially those above 30 MHz. It is likely that Amateurs will increasingly be forced to share spectrum and that some of those sharing the bands with us will be [unlicensed] Part 15 devices which are proliferating.

The committee will closely monitor the technical and regulatory developments related to the operation of unlicensed and licensed non-Amateur transmitters and intentional radiators in Amateur allocations.

5. The *Technology Task Force* (TTF) recommended that three specific technologies be the focus of development studies: Digital Voice, High Speed Digital Networks, and Software Defined Radios. Working groups for High Speed Digital Networks and Software Defined Radios should be created to join the existing working group for Digital Voice.

It was voted that the ARRL proceed with the development of High Speed Digital Networks and Software Defined Radios (SDR) for the Amateur Service. A group of individuals knowledgeable in these fields will submit report to the *Technology Task Force* on these modes at the July 2001 Board Meeting.

6. It was agreed that the following seven positions will constitute the American Radio Relay League's official Legislative Positions during the 107th Congress.

Position #1: Consistent Application of FCC Limited Preemption Policy Toward Amateur Radio Antenna Systems.

"...the American Radio Relay League supports non-discriminatory application of the FCC's longstanding limited preemption policy to all types of land use regulations, in order to effectuate the important Federal interest in protecting and promoting Amateur Radio communications. ARRL urges Congressional support for the clarification of the FCC limited preemption policy governing residential Amateur Radio antennas, so that private land use authorities cannot preclude, but must reasonably accommodate Amateur Radio communications in subdivisions and communities."

Position # 2: Support for Federal Preemption of Telecommunications Regulation

"...the ARRL supports measures to improve federal management of telecommunications, including strengthening and improving the ability of the FCC to promulgate and enforce reasonable regulation of transmitter and antenna issues, of the resolution of electromagnetic interfer-

ence, and of operating rules."

Position #3: Radio Spectrum Management

"...the ARRL believes that spectrum auctions should not be used as a means to offset specific budget items, and that specific spectrum decisions should be made by expert professional agencies not Congress. Furthermore, the ARRL believes that public service (including Amateur) radio frequency allocations under current US regulations should now be statutorily exempt from auction or reallocation to commercial services, whether on a primary or secondary basis, and that compensatory spectrum should be allocated whenever FCC or NTIA determine that an existing public service frequency must be reallocated to another radio service."

Position #4: Preserve and protect Amateur Radio Frequency Allocations

"...the ARRL supports measures that would preserve and protect, on a primary basis, Amateur operator access to existing Amateur Radio Service and Amateur Satellite Service frequencies as a natural resource for the enjoyment of all properly licensed individuals, and protect against interference from unlicensed transmitters such as Part 15 devices operating on frequencies allocated to the Amateur Radio Service."

Position #5: Mandatory RFI Standards for Consumer Electronic Devices

"...the ARRL supports requiring the Federal Communications Commission to develop and implement effective mandatory standards for radio frequency susceptibility of consumer electronic devices."

Position # 6: Opposing Restrictions on Radio Reception

"...the ARRL opposes efforts to expand current prohibitions against cellular and PCS eavesdropping beyond those that already exist, except insofar as such efforts strengthen or clarify existing prohibitions, and are specifically restricted to cellular and PCS services that interface with wireline communication."

Position #7: Support for the Military Affiliate Radio System

"...the ARRL urges Congress to support funding, legislation and other measures to maintain a healthy and robust Military Affiliate Radio System."

7. The ARRL Board voted to restructure the League along the lines of a corporation. The Executive Vice President (David Sumner, K1ZZ) will manage the affairs of the League under the direction of the Board of Directors and will be the Chief Executive Officer (CEO) of the League. The following officers will report to the Executive Vice President.

QST Editor Mark Wilson K1RO will serve as the League's Chief Operating Officer (COO). He will be

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responsible for all matters relating to publication, advertising (including sales and marketing), circulation, membership services, field services and volunteer examinations.

The Chief Financial Officer (Barry Shelly N1VXY) has the responsibility for and supervision over any matters related to personnel policies, comptroller functions, purchasing and administrative services and data processing. He shall be the Business Manager of the League.

In addition, the Board okayed the hiring of a Development Director and Advocacy Director.

8. An increase in ARRL dues was voted to go into effect on July 1, 2001. The last ARRL dues increase was in July 1997. The regular \$34 dues goes to \$39 and Senior Membership (for those over age 65) goes from \$28.00 to \$33.00. Without a dues increase, the League would only be able to provide services for another 4 years. It was a case of "cut programs or "raise dues." Also discussed was the possibility of having various levels of membership (such as "Basic", "Standard" and "Premium" - each level with increased benefits.)

9. The League Board voted (9 to 6) NOT to further support S.25.5 and to endorse its total elimination. This is, of course, the international law that mandates code proficiency when operating on HF frequencies. There was over 2 hours of debate (and several "straw" polls) on this issue. Those opposed wanted more input on the impact of the recent Amateur Radio restructuring before supporting the total elimination of code proficiency. The League will vote to end the international code proficiency requirement at the Region 2 Conference in Guatemala in October.

The League said that each country should be allowed to determine for itself whether it wants to have a Morse code requirement. While saying that they no longer supported S25.5, the Board said they continue to support Morse CW testing in the U.S. as an important mode.

The following resolution concerning Morse code communications was adopted by the Board.

- WHEREAS, Morse code, named after Samuel Finley Breese Morse, is an invention that has been essential to telecommunications for over 150 years; and
- WHEREAS, the international Morse code has been an essential mode to Amateur Radio from its beginning to this day; and
- WHEREAS, Radio Amateurs formed a pool of skilled Morse operators vital in the 20th Century for national defense, disaster, maritime-mobile and aeronautical-mobile communications; and
- WHEREAS, since the 1950s there has been a great influx of other technologies that have gradually reduced the need for trained Morse operators outside the Amateur

services; and

- WHEREAS, the aeronautical-mobile and maritime-mobile applications of Morse have been or are being terminated throughout the world; and
- WHEREAS, there is an agenda item for the 2003 World Radiocommunication Conference to consider Article S25; and
- WHEREAS, it is highly likely that administrations will delete the Morse code requirement in Article S25 at WRC2003; and
- WHEREAS, the international Amateur community has followed the United States lead in reducing the code speed requirement for licensing to operate on bands below 30 MHz to 5 words per minute and there is a trend toward elimination of this requirement;
- NOW THEREFORE BE IT RESOLVED, that the ARRL Board of Directors recognizes and accepts that suppression of the Morse code requirement in Article S25 is likely to occur at WRC 2003; and be it
- FURTHER RESOLVED, that deletion of the requirement from Article S25 should not automatically or immediately mean a similar removal of the Morse code from Part 97 of the FCC rules; and be it
- FURTHER RESOLVED, that each administration should determine if Morse code is retained as a testing element; and be it
- FURTHER RESOLVED, it is the opinion of this Board at this time that Morse code should be retained as a testing element in the U.S.; and be it
- FURTHER RESOLVED, that the Morse code is deserving of continued support as an important operating mode including providing for the protection and maintenance of sufficient spectrum in band planning; and be it
- FURTHER RESOLVED, that staff develop a program designed to promote the use of Morse code; and be it
- FURTHER RESOLVED, that this resolution supersedes all previous statements of policy related to suppression of the Morse code requirement in Article S25.

10. It was voted that the ARRL President appoint a panel of no more than five members for the purpose of soliciting membership input and updating the ARRL position on "refarming" of the HF Novice bands in light of the 1999 FCC license restructuring Report and Order.

This effort seeks to realign the recent restructuring of the Amateur Service to the spectrum previously available under the old six license class system.

The *Spectrum Refarming Committee* shall initiate its appeal to the membership no later than May 2001, and must submit its final report to the Board for consideration at next year's (January 2002) Annual Board Meeting.

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AMATEUR RADIO STATION CALL SIGNS

...sequentially issued as of the first of February 2001

Radio District	Group A Extra	Group B Advanced	Group C Tech/Gen.	Group D Novice
0 (*)	AB0PW	KI0RX	(***)	KC0JQI
1 (*)	AA1XN	KE1LY	(***)	KB1GGB
2 (*)	AB2RE	KG2RN	(***)	KC2HLW
3 (*)	AA3WN	KF3EA	(***)	KB3GAP
4 (*)	AG4FS	KV4FK	(***)	KG4LNI
5 (*)	AD5CC	KM5XG	(***)	KD5MZT
6 (*)	AD6UZ	KR6ER	(***)	KG6EYM
7 (*)	AC7LB	KK7WS	(***)	KD7LSH
8 (*)	AB8JS	KI8JZ	(***)	KC8QGB
9 (*)	AB9BI	KG9RA	(***)	KB9YTO
N. Mariana	NH0Z	AH0BB	KH0MH	WH0ABP
Guam	(**)	AH2DN	KH2VD	WH2ANX
Hawaii	(**)	AH6QW	(***)	WH6DGN
Am. Samoa	AH8U	AH8AI	KH8DO	WH8ABF
Alaska	(**)	AL7RR	KL1BN	WL7CVE
Virgin Isl.	(**)	KP2CP	NP2LM	WP2AIN
Puerto Rico	WP3K	KP3BL	WP3IX	WP4NOT

* = All 1-by-2 & 2-by-1 call signs have been assigned.
Group A (2-by-2 call signs beginning with AA to AL) now being assigned.
** = All 2-by-1 call signs have been assigned. (Group B call signs now being assigned.)
***= All Group "C" (N-by-3) call signs have run out and Group "D" (2-by-3) call signs are being assigned.

Note: New prefix numerals now being assigned in Puerto Rico (KP3/NP3), Hawaii (AH7/KH7) & Alaska (AL0/KL0,1)

[Source: FCC Amateur Service Database, Washington, DC]

RICHARD BURTON, EX-WB6JAC HEADS BACK TO JAIL

On January 22, Richard Burton was sentenced to 3 months imprisonment for unlicensed operation, and one year probation. He also must undergo psychological evaluation and treatment. He reports to the U. S. Marshal's office on February 26 at noon to start his 3 month sentence, but the judge did say he could come earlier if he wished.

Burton has a long history of unlicensed operation going back some twenty years. In 1981 his General Class license was revoked for various Part 97 violations. In 1982 he was caught on the ham bands without a license and transmitting foul language over the airwaves. The obscenity charge was later dropped upon appeal. Burton served six months jail time for the conviction.

While on probation in 1984, Burton was again found to be transmitting without a license and again in 1990. He was fined \$2000 after the second incident. In 1992, Burton passed the Technician exam and was briefly licensed ...that is, until the FCC realized its error and quickly cancelled his ticket.

Burton was indicted last May by a federal grand jury and charged with six felony counts including operating on Southern California repeaters after his license had been cancelled. Arrested August 5th, bail was set at \$20,000. Burton was released on bond until his trial. He pleaded not guilty at his arraignment. The November trial was postponed until a plea bargain arrangement was worked out where he agreed to the three months imprisonment.

- **Belgium Lowers Morse Code Test Speed.** According to the *Radio Society of Great Britain*, the Belgian Minister of Telecommunications has signed a new Amateur Radio decree in which, among other changes, has reduced the Morse code test speed required for HF access to five words-per-minute. The new regulation will go into effect after it has been published in the official journal, which should occur shortly.
- **"NA1SS this is WA2CAM, over."** Commander William Shepherd, KD5GSL, has been able to talk directly to the pupils of three schools from the orbiting International Space Station using amateur radio. On the 18th of January he spoke for nearly ten minutes to ten students at Sheldon Elementary School in Varysburg, New York. The ISS Amateur Radio contact is covered (complete with a photo section) on the school's website at <http://eag-buffnet.net/iss.html>. The media was in full force, representing network and cable stations from Batavia and Buffalo, as well as local and regional newspapers.
- **The 50th anniversary of the Dayton 2001 Hamvention®** will be held May 18 - 20 ...with some 30,000 radio amateurs attending the big ham show. It all started about 1950 when John Willig, W8ACE asked the *Dayton Amateur Radio Association* to sponsor a ham convention but was turned down. John wanted to have a quality affair. Speakers and prizes would be a drawing point. John finally found a champion in Frank Schwab, W8YCP (now W8OK), the newly elected president of the club.
A meeting was held and the DARA Board allocated \$100 to get started. The first organizational meeting was held in January 1952 and the Southwestern Ohio Hamvention was born. The next year the name became the "Dayton Hamvention®" which was registered as a trademark.
DARA wanted the hamfest to be held in April but the Biltmore Hotel, in downtown Dayton was booked so March 22, 1952 became the chosen date causing a short lead time. The FCC agreed to give license exams. There were 7 exhibitors and 6 forums. In 1955 the Awards Program began with the "Amateur of the Year." In 1964, Hamvention® moved to Hara Arena in neighboring Trotwood, Ohio where it continues to be held. Free buses and handicapped parking were added in 1969. In 1973 it became a 2 day event with Sundays added in 1974. The Flea Market has grown from 200 to nearly 3000 spaces.

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CUTTING EDGE TECHNOLOGY

Patent champions of 2000. IBM holds an impressive statistic: for the eighth straight year, IBM was awarded more U.S. patents in 2000 than any other company, with a whopping 2,886. No one else came even close to that total.

The quick way out. A new generation of "EXIT" signs made up of light-emitting diodes is gradually replacing conventional, incandescent-bulb-based signs. The solid-state version can theoretically last for decades, with no need to frequently replace burnt-out bulbs. They are more electrically efficient and 30 times brighter.

Advanced Tracking Technologies of Houston has introduced "TravelEyes2" an automobile dashboard travel recorder that doubles as your personal spy. It uses the Global Positioning System (GPS) to record where you have been ...including every turn, locating every stop, the exact time and duration of each stop, mileage and, of course, speed. It then produces a downloadable report based on the stored data. TravelEyes2 plugs into your car's cigarette lighter (or hides inside the vehicle) and can store up to 50 hours of driving time before needing to download to a "Windows-based" computer. It collects data only while the car is moving. A side use is for tracking someone using the car without them knowing. Easily concealed, the gadget is only about the size of the deck of cards. Check out: <<http://www.traveleyes.com/>>

If you think it's bad now... With rolling blackouts presently taking place in San Francisco, remember that the worldwide demand for electricity will double by the year 2020. Where will it come from? What new power sources will come into use? Will new types of low-loss electrical transmission lines come about?

It pays to stick together. Electrical engineers say that you can eliminate some problems in a hardware system by using both halves of a connector from the same manufacturer. No two companies build wire-harness connectors in exactly the same way. Different "recipes" of metal plating for the shell and the contacts can lead to unwanted crosstalk and stray capacitance.

New lighting on the way for cars. Light-emitting diodes are more efficient than incandescent bulbs, and are easier to use in automobiles. Plans for

future designs include turn signals built into side mirrors; interior cabin lighting with colors you can change with the flick of a switch; and red/blue displays indicating drink temperatures in cup holders.

No-clean camera lenses. In applications where it's difficult or inconvenient for a video journalist to clean off the camera lens (during a rainstorm or at sea), a device called Spin Tec can be attached. It spins at 10,000 rpm, flinging off any water droplets and debris. This keeps the field of view clear and anything hitting the lens vanishes instantly.

EMERGING COMMUNICATIONS

Iridium flares are still visible. In November, Iridium Satellite LLC announced that they were taking over the assets of the once-defunct Iridium project, and also launching additional satellites. The new financing also means that you can still track particular Iridium "flares," or glints of bright light reflected from the satellites, visible for a few seconds from the ground, by logging on to the following Web site: <<http://www.satellite.eu.org/sat/vsophp/iridium.html>>.

Globalstar is in trouble. A competing global satellite communications system, Globalstar, is billions of dollars in debt. Started almost exactly one year ago, it may be under Chapter 11 bankruptcy protection within just a few months.

Concern over cell phone use in cars is growing. Eleven states now require patrol officers to determine if phones were factors in traffic accidents. Since 1995, 37 states have considered curbs on cell phones in moving vehicles. So far only minor restrictions have been adopted by California, Florida and Massachusetts.

Examine the latest earthquake data on the Southern California Earthquake Data Center's Web site at <<http://www.scec.org>>. Fault lines are constantly monitored, and even the tiniest quakes are measured and collected here.

Ultrasound will journey into space. An upcoming Space Shuttle mission to the International Space Station will carry a specially modified ultrasound machine. Astronauts will take pictures of the inside of the human body for more detailed examination on how our organs behave in zero gravity.

Here comes the sun. How can the change of seasons cause a breakdown in communications? We're all aware of how the moon causes an eclipse by passing between the Earth and the sun. Now replace the moon with a communications satellite; it won't cast a shadow, but a satellite receiving dish pointing straight into the sun is often overwhelmed by the bigger, brighter, and more powerful transmitter. The satellite's signal gets swamped. This often happens during the spring and autumnal equinoxes, when the sun crosses the equator. Most satellite providers let subscribers know about these events in advance and offer other means of covering the temporary loss of service.

Fiber-optic cables on power lines may get damaged from corona discharge. Electric utilities have for years carried fiber-optic cables in their high-voltage transmission lines, wrapping them around the grounded static lines along the very top of each tower or even along the phase conductors themselves. Fibers can carry digital information between the utility and individual substations, or utilities can lease the telecommunications capability to other customers. But the hundreds of thousands of volts in this environment can eventually eat away at the fiber's protective jacket, allowing water to get in. Even lightning bolts striking the static line can damage the fiber.

High-voltage insulators on long spans. Have you ever seen long poles connected between high-voltage transmission lines, far away from the towers, and wondered what they are for? They're insulators, much like the ones hanging from the towers themselves, that support the cables. But very long spans (700 yards or more) require extra physical spacing to make sure bad weather doesn't cause swinging cables to touch one another. Not only does that cause a short circuit, but the resulting dynamic forces can cause the cables to violently crash into other cables, too.

What's in a name? The IEEE 1394 serial bus is a high-speed data communications standard used in the latest computers. It's often called Firewire in the United States. But in Japan, it's referred to instead as "DV port" or "I.Link." The word "Firewire" creates bad images in Japanese culture.

Use it or turn it off. One energy study suggests that as much as half of all office lighting is unused. With power companies straining to keep up with

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demand, why waste that power to create light when no one is around? Occupancy sensors are devices installed in offices to "look around" for human activity within the room, and turn off the lights when nothing is sensed for a set period of time.

There are two main types of occupancy sensors, both with good and bad points. Infra-red sensors look for a heat source that moves; people don't move much while at their desks, and they don't want the lights going out while they're working. Ultrasonic sensors can detect minuscule movements, but the high-frequency waves they emit can be heard by some people with sensitive hearing, creating headaches.

Is a radio station worth it? Real estate values are now making some commercial radio transmitter sites look more financially beneficial to owners as just pieces of land to trade. Land may be more valuable to put a building on, rather than just an antenna.

Most cellphones are not used for business communications. So says a WebViews survey conducted by the Cellular One Group. Only 23% of wireless phone use is for business calls. Twenty-two percent of the 77% of respondents using the phone for personal calls say they most often call a spouse or significant other. Other personal calling destinations for the "personal calls" include, 20% to children, 11% to friends and 24% to conduct other personal business.

Woman invents world's first fully disposable mobile phone. Be on the lookout for vending machines in airports that sell ten dollar phones with pre-loaded air-time! Randice-Lisa Altschul, 39, a highly successful inventor and entrepreneur from Cliffside Park, NJ, has patented a technology that can be used to manufacture cellular phones so inexpensively that they can be sold for a fixed amount of air time - just as long-distance calling cards are now.

Dubbed the Phone-Card-Phone, the two-by-three inch recycled paper phone is as thick as three credit cards. It comes with 60 minutes of calling time and a hands-free attachment. The phones are thrown in the garbage once the minutes are used, or more minutes can be added.

Altschul, who has 22 patents on the technology, says her business, Dieceland Technologies Corp., has 100 million units on order. She is also creating a paper laptop computer which she says will be avail-

able for as little as \$10 dollars to encourage low-income families to surf the net.

Civil engineering with GPS. Engineers maintaining the longest suspension bridge in the world (more than 4,500 feet across a Hong Kong shipping channel) use sensitive Global Positioning System receivers mounted on the bridge to measure loads. Weather changes, seismic activity and even rush-hour traffic create different types of loads in and along the bridge, and the GPS receivers relay real-time data to a central data center for evaluation.

The number of recently released criminals will top five million this year. Most are on either probation, parole or some other form of community supervision. Ninety-seven percent of all prisoners are released and two-thirds of them return to prison within three years.

Now with the help of the Global Positioning System, law enforcement agencies can keep an eye on them, twenty-four hours a day, seven days a week. Florida-based Pro Tech Monitoring has developed a GPS-based tracking system, called the SMART System. <<http://www.ptm.com>>

By using cellular technology in collaboration with GPS, the system has the ability to reliably penetrate buildings. The offender wears a 3.5-ounce, tamper-proof ankle bracelet transmitter that is electronically leashed to a portable tracking device (PTD). The PTD, which contains the GPS receiver and cellular communications, constantly monitors an offender's movements and sends GPS location information to a central office.

The location of the individual (accurate to 30 feet) is displayed on a background map running on a PC, which is programmed with the offender's "rules of release." These rules specify where the offender should or could be at all times. If an offender breaks the "rules", the system automatically warns the offender and then sends a message to a control center if the problem is not immediately corrected.

COMPUTER INFO

Make lemonade Dept.: The author of the "Love Bug" computer virus, which infested millions of computers around the world last summer, recently found himself in an enviable position as a result of his "work." Authorities dropped charges against 24-year-old Onel de Guzman of the Philippines, and he has been

inundated with job offers. Many software companies are looking for good programmers with data-security experience.

Faster microprocessors may make your computer system "lock up" more frequently.

Upgrading a motherboard by simply dropping in a faster processor may not be a cakewalk. It can result in an unstable system. Check the processor's documentation as well as that of the motherboard. It may be necessary to upgrade the BIOS chip, the software on the motherboard that tells the computer exactly how to boot up. A faster processor may require software upgrades for video cards and sound cards, too.

The fastest PC microprocessor on the market now runs at 1.5 GHz!

Intel's Pentium IV presently holds the record, with speeds as fast as 2 GHz expected by later this year.

William Hewlett, one of the co-founders of the Hewlett-Packard Company, passed away on January 12th. He was 87 years old. He started the company with David Packard (who died in 1996), a college friend from Stanford, in a California garage in 1939.

Their first product was an audio oscillator. Since that time the company has grown to over 86,000 employees, thousands of different technical products, and revenues in the billions. The HP Co. recently announced that it spent almost \$2 million to buy and refurbish the original garage that was the birthplace of the company.

Dubbed "the birthplace of Silicon Valley," the 95-year-old structure is an official California state historical landmark. (A lot of notable items came from California garages: the first Apple computer and the first OSCAR satellite, to name two.)

You can't beat a CRT for resolution. Cathode-ray tubes have been around for almost a century. But they are often big and bulky, consuming a lot of electrical power. They are also quite long from front to rear. One idea to make a CRT shallower is to make use of two necks and two display yokes, built into the same tube, mounted side by side. This allows two electron beams to operate just one half of the screen apiece. This type of CRT isn't likely to be found in commercial applications, but it points out how much engineers are trying to make picture tubes easier to mount. The depth of the picture tube is one reason why so much research is going on to make plasma displays (which are so thin they can be hung on the wall)

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with display resolutions at least as sharp as conventional CRTs. Still, almost 200 million picture tubes are built each year. There's probably one within your view right now.

Anti-virus software is under development for computer viruses that haven't been written yet. Engineers believe that the next computer hardware platform to get hit with a computer virus is the Personal Data Assistant (PDA), the handheld computer. Companies such as McAfee and Symantec are already working on shielding software to protect the Palm operating system.

USB conflicts. The Universal Serial Bus is the newest method of connecting computer peripherals (keyboards, mice, scanners, disk drives, etc.) quickly and easily. It was created to be a universal standard. But because each hardware manufacturer must provide software in order for its equipment to work in a PC, sometimes a USB driver won't work correctly with other USB drivers for other devices. "Plug and play" sometimes ends up as "plug and pray".

Will electronic books catch on? Barnes & Noble.com thinks so. <www.barnesandnoble.com> They have begun offering books that are read with the new Adobe Acrobat eBook Reader 2.0 -- an upgrade to the Glassbook Reader, which Adobe acquired last year. The big advantage is convenience and the fact that publishers and booksellers do not have to invest in costly books. A disadvantage is that you can't easily curl up with a computer-based book.

The Adobe eBook reader is particularly well suited for graphics-intensive non-fiction books such as cookbooks, children's books, college textbooks and travel books.

New features of Adobe Acrobat eBook Reader 2.0 include an easy-to-use, intuitive interface that allows for full-text search, bookmarks, text highlights and annotations.

A "Bookstore Button" activates an internal Web browser that enables you to securely purchase eBooks on the Internet from online booksellers. When your order is complete, the Acrobat eBook Reader downloads your eBooks so you can read them right away. If the publisher allows, the books can be read aloud ...even copied and printed. A personalized library stores and organizes your eBooks, displaying the book covers for all the eBooks you own or borrow.

The Adobe Acrobat eBook Reader

2.0 software can be downloaded free from the <www.Adobe.com> homepage.

By the way, Adobe is only one of many eBook readers on the market.

Computer-Aided Drafting is now Available on handheld computers.

CAD software has traditionally been limited to the powerful desktop computers, and to a lesser degree laptops. But Arc Second's PocketCAD software lets users design, draw and review CAD files on Pocket PCs and tablets. This lets anyone take CAD out into the field.

It takes electricity to make an integrated circuit -- lots of it.

The electricity used in an average square foot of space in a semiconductor wafer fabrication plant can be up to 100 times that used in an average office. One estimate places the cost of electric power necessary to make a chip to be one to two percent of the total cost of integrated-circuit production.

Linux, an operating system gathering steam against Microsoft's Windows.

Linux, an operating system gathering steam against Microsoft's Windows, has until recently been used primarily by engineers and hobbyists. But Linux now has a commercial supporter. Corel, known best for WordPerfect and CorelDraw software, announced recently that it is going to release programs designed to run on a Linux platform.

INTERNET NEWS

According to the Jan. 10th *Moscow Times*, the Russian Internet is slowly making progress. A survey showed user numbers inching up, from 2.5 million in 1999 to 4.5 million last year. "As a percentage of the national population, the few million Russian web-surfers is just a speck in cyberspace — and a quarter of those are concentrated in the capital." That survey also showed that "...20 percent of the population had never heard of the Internet, while 35.6 percent had heard "something" about it.

But not much e-commerce is being transacted and "breaking even" has become the goal. "E-commerce is creeping bit by bit into homes and offices, mainly in the big cities and mainly by way of business to business, or B2B."

Online retailing has had a "sluggish startup" due to "...low credit card and computer usage, distrust of online privacy and a shaky delivery network, especially outside the capital." A popular payment method is cash on delivery.

"Consumer services such as online banking are just getting started, and laws regulating the Internet have yet to be laid down in full."

China now has more than 20 million Internet users with nearly 9

million of them on the Web. Websites in China must hold Internet Content Provider (ICP) licenses issued by the *Ministry of Information* and each licensed operator is required to post a banner of certification and license number on its homepage. The license is valid for one year.

Seventy percent of Chinese Internet users are male. Young people remain the main users with 56 percent being less than 24 years old. Internet usage is concentrated in the main cities. It is no longer unusual to see Chinese users showing up in U.S. chat rooms.

A more wired world! For the first time, more than half of the world's web surfers are located out of the United States. And the U.S. share will continue shrinking as the planet embraces the Net. According to a new study by WebSideStory Inc.'s StatMarket, about 45 percent of the world's Web traffic was generated in the US, said. Germany accounted for nearly 5.6 percent, followed by Canada with 5 percent, South Korea at 4.6 percent and Japan with 4.3 percent. <<http://www.websidestory.com>>

Trivia question! In the late 1950's, a man by the name of Arthur Granjean invented something he called "L'Ecran Magique", the magic screen, in his garage. In 1959, he took his drawing gadget to the International Toy Fair in Nuremberg, Germany. The Ohio Art Company decided to take a chance on the product. The L'Ecran Magique was soon renamed and became (and, half a century later, continues to be) the world's most popular mechanical drawing toy. What is it called?

Chrysler has unveiled a car equipped with the latest wireless web-access technology.

The Chrysler PT Cruiser has a voice-responsive dashboard computer and two touch-screen computers in the back so passengers can get real-time updates on their trip. They can also play games, surf the Internet or download digital audio files. The firm joins General Motors and Ford in launching cars with the capability to access advanced global positioning and online news and entertainment services.

Circle 360. Whether you regularly read electronics hobby magazines or professional trade journals, you may

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remember column ads with a caption that read "Circle number (xxx)". The idea was to circle particular numbers printed on a postcard included with the magazine, mail it in, and the publisher would see that you receive more detailed information on those particular products through the mail. But this technique is now another casualty of the digital age; the Internet has made it obsolete. Anyone wishing to learn more about a company's product can click on a link or log on to its Web site in an instant, for little or no cost.

According to year-end research released by Jupiter Media Metrix, **broadcasting over the Web is not yet catching on!** It finds that real-time audio and video media players are installed on just about all PCs. But less than half of them are being used.

Use of streaming media players, such as RealPlayer, Windows Media Player 6 and 7 or QuickTime 4.0 to receive broadcast.com sites (which Yahoo acquired in 1999 for \$5.7 billion in stock and renamed "Yahoo broadcast") has been decreasing. Yahoo says that while it doesn't track the number of visitors, it disputes the findings and says traffic to its broadband sites is actually increasing.

Back to the drawing board Dept.

The Secure Digital Music Initiative (SDMI) is a forum that brings together more than 180 companies and organizations representing information technology, consumer electronics, security technology, the worldwide recording industry, and Internet service providers.

SDMI's unpopular mission is develop a system that permits the distribution of "secure music" — that is, music that consumers cannot copy and distribute over the Internet. SDMI's objective is to protect the playing, storing, and distributing of digital music so that a new market for online music may emerge. DMAT (Digital Music Access Technology) is the trademark for products that are compliant with SDMI specifications.

Last year SDMI developed four separate DMAT systems that prevent music piracy. Central to these systems is "watermarking," in which an inaudible message is hidden in music to provide copyright information to devices like MP3 players and recorders. SDMI-compliant devices cannot make copies of protected music. They still would be able to play all existing CDs and MP3s, including downloaded MP3s.

Last fall, SDMI issued the "HackSDMI Challenge" to help them choose among four proposed watermarking technologies.

During the three-week challenge, hackers could download samples of protected music, and were invited to attempt to remove the secret copyright watermarks.

At least two teams of students have done exactly that. One was from Princeton University, Rice University, and Xerox -- another, two computer science students from France (Julien Stern, a PhD student in cryptology and Julien Boeuf, a masters student in multimedia, images and sound.)

Both groups successfully defeated all four of the watermarking systems, by rendering the watermarks undetectable without significantly degrading the audio quality of the samples. A third group also claims success.

In short, SDMI watermarking does not work as advertised. Leonardo Chiari-glione, who heads up the Secure Digital Music Initiative, recently announced that he was resigning. See <www.sdmi.org>, <www.julienstern.org/sdmi/> and <www.cs.princeton.edu/sip/sdmi/>

Internet entrepreneur of the week.

Dennis M. Hope, the self-appointed head of the "Lunar Embassy" and his six employees in Rio Vista, California have been selling off acreage on the moon and other planets (all of which he claims to own) over the Web <www.lunarembassy.com>. He says a loophole in the 1967 U.N. Outer Space Treaty makes his property rights allegation legitimate.

The agreement forbids governments from owning extraterrestrial property, but fails to mention corporations or individuals. Hope filed his declaration of ownership for all the planets and their moons (as well as the Earth's Moon on November 22, 1980) with the USA, Russia and the United Nations. So far his claim has never been tested.

Supposedly, more than 300,000 people have purchased properties from Lunar Embassy. Buyers receive a deed to their one acre extraterrestrial plot, a site map, a copy of the lunar constitution bill of rights and a copy of Hope's declaration of ownership filed with the U.S. government. There's also a 30-day money back guarantee.

The Lunar Embassy is now establishing licensed "ambassadors" (resellers) who also offer space properties. One such real estate agent is British-based at <www.Moonestates.com>. "All of our property has been legally obtained from the Lunar Embassy in Rio Vista, California." They charge £19.99 - about \$30 - for an acre on either Mars or Venus which "...includes the mineral rights."

Trivia answer. It's called "Etch-A-Sketch"! The \$10.00 toy is still sold today by the tens of thousands. The Ohio Art Company has an online "working" version at: <www.etch-a-sketch.com/html/onlineetch.htm> that you can use to draw pictures by using your PC's up-down and right-left arrow keys. Using your mouse, you can even shake it to erase your drawing! Another online version automatically writes your first name at <www.etch-a-sketch.com/> .

WASHINGTON WHISPERS

Track the ISS and HST by eye from the ground! NASA keeps an impressive Web site that allows you to find out when and where you can see the International Space Station, Hubble Space Telescope or any one of a dozen other orbiting satellites in the sky from your own backyard. Log on to <<http://spaceflight.nasa.gov/reldata/sightings/>> and just tell it what major city you're closest to. It quickly provides coordinates and even a star map with details on exactly when and where the target will appear in your local sky.

A federal judge let stand a lawsuit on behalf of a Louisiana man that contends companies are making and selling cell phones with the knowledge that they may be dangerous. The industry tried unsuccessfully to have the lawsuit thrown out on the grounds that Congress has given the FDA the job of overseeing cell phone safety. The lawsuit contends that cell phones should have been sold with headsets to reduce users' exposure to radiation, particularly to the brain. If the lawsuit is certified as a class action, its magnitude could surpass the tobacco litigation. There are more than 100 million U.S. cell phone users. The defendants include 16 cell phone makers including Nokia and Motorola.

The FCC has socked Madison, Wisconsin radio station WZEE with a \$7,000 fine for playing an indecent, unedited recording by Grammy-nominated rapper Eminem. (Real name: Marshall Mathers.) WZEE is owned by radio giant Clear Channel Communications which has about 1,000 stations. A listener sent in a tape recording of the broadcast to the FCC. The FCC's decency standards are enforced from 6 a.m. to 10 p.m.

The Dept. of Transportation's

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Intelligent Vehicle Initiative recently conducted a study on potential driver information overload from high-tech automobile gadgetry. The DOT tested 18 men and 18 women, ages 20s to 50s. Each drove a simulator about 45 minutes, covering about 21 virtual miles. One in six drivers got confused and missed their turn, and about ten percent of the 36 test drivers "crashed" their simulators due to "sensory meltdown." The simulator used for the test included a cell phone, a forward collision-warning system, a navigation system, and an Internet-equipped computer screen. (Associated Press)

The FCC is undertaking its 2000 Biennial Review of regulations that are no longer necessary ...and whether such regulations should be repealed or modified. There are no personal or Amateur Radio items on the extensive list. It was a review of Amateur Service regulations during the 1998 Biennial Regulatory Review that brought about last year's restructuring of the Amateur Radio Service. The review is required every two years by the *Telecommunications Act of 1996*.

Commissioner Michael Powell (37), the son of Secretary of State Colin Powell, is the new FCC Chairman. He replaces Bill Kennard who left the FCC on Jan. 19. Powell does not need to be confirmed by the Senate. The president can designate the chairman from a sitting commissioner without any Senate action. A Powell-led commission is expected to bring a more business-oriented approach to the FCC, compared to the regulatory-oriented approach under Kennard.

AMATEUR RADIO

Art Bell, W6OBB, has been coaxed out of retirement and is returning February 5th to his syndicated "Coast To Coast AM" radio program which he broadcasts from a studio in his home in Pahrump, Nevada. Bell quit the highly rated talk show last April after his son was kidnaped and raped in 1997 by a substitute teacher who is now serving a jail sentence for his crimes.

Bell's overnight talk show about "all things unexplained" will run week nights from 1 a.m. until 6 a.m. Eastern on more than 430 stations. It is distributed by Premiere Radio Networks which also syndicates the Rush Limbaugh and Dr. Laura Schlessinger talk shows. Art Bell's website also returns Feb. 5th. <www.artbell.com>

FCC Amateur Radio Enforcement:

David M. Kunz N6TC (San Francisco, CA) must respond to the allegation that he transmitted music for over a half an hour on the KK6AN and KB6LED repeaters on December 26th. "The music was heard on 147.975, 440.475, 442.250 and 927.625 MHz."

Paul M. Miller KD6QDW (Pleasanton, CA), Robert D. Kirby

KB6LED (Hayward, CA) and **Donald G. Bertone KK6AN (San Francisco, CA)** have been asked to respond to the allegation that their repeater systems retransmitted music for over 40 minutes on December 26th. There was no indication that there was a control operator on duty at their system.

Michael E. Dreschsler N1ABL (W. Hartford, CT) also has been asked to respond to the allegation that his 146.64 MHz repeater system was operating on September 10, 2000. "Emergency calls were made to the repeater as well as a specific request to the control operator, but there was no response."

Alexei Luque KG2PR (Elizabeth, NJ) has been advised that the FCC has information indicating that he is operating an unidentified 144.07/143.73 MHz repeater. Furthermore the system appears to have no controller and is used at least partially for trucking company business. He was asked to supply information about the repeater and its operation.

Barry J. Fisher KC8PWL (Roscommon, MI) has been ordered to retake his Technician Class license examination at the FCC District Office in Detroit.

Phillip A. Robinson N9GOR (Lindenhurst, IL) and **Barry M. Carver AC4VO (Hartford, AL)** were both advised that "Monitoring of your station on Jan. 20, 2001 indicates that you did not comply with the identification requirements in the Amateur Radio Service."

Joseph Rogerson N4XPZ (Gray, GA) was warned by the FCC that it has information that he has been interfering with Amateurs operating on 14.300 and 14.302 MHz in the 20-meter ham band.

Michael Horn KB8CDF (Lenore, WV), Ken Brown KF8HL (Davin, WV) and **Carl Tussey KB4UCE (S. Williamson, KY)** are apparently operating an uncoordinated repeater on 145.390 MHz in Mingo County, WV. It is causing interference to KC8FKP, a coordinated repeater operated by the Ports-

mouth Radio Club. The frequency coordinator, SERA has notified them of the interference "...but you have refused to take steps to solve the problem." They have been ordered to supply the FCC with information on their repeater system and steps taken to resolve the interference.

Dennis M. Boyle KB9RRN (Greenwood, IN) has been the object of

complaints against his uncoordinated repeater on 146.585 in Johnson County, Indiana. His previous request for coordination was declined due to potential interference problems and he has "...not been responsive in discussing a solution." The FCC has asked him to explain his repeater operation and any received complaints.

Ernesto Marrero N3UBD (Bethlehem, PA) has been warned that the

FCC has monitoring information indicating that he has engaged in lengthy transmissions during November and December 2000 without properly identifying his station. Additional incidents will result in enforcement action.

Richard Phillip Cantwell (Louisburg, NC) was cautioned that monitoring

information indicates he was transmitting radio signals from his delivery vehicle: "The apparent purpose ...was to interfere with repeater operations on 146.88 MHz." He was cautioned that such unlicensed operation and intentional interference can result in fines "normally in the range of \$7,500" and equipment seizure. He was ordered to explain his operation.

Stephen Anderson AA8DP (Somerset, KY) was asked to verify that he

was the control operator when a **Charles N. Puckett KF4ZMG** was transmitting on 3.860MHz "...a frequency not authorized under his [Technician] license."

Andres L. Hernandez KP4ANG

(Aquadilla, PR) has been warned by the FCC for his alleged deliberate interference with other operators on 24.935 and 24.937 MHz and for "making one way digital transmissions on those frequencies." Additional incidents will result in a fine and license revocation.

Phillip F. Krichbaum, N0KE (Vail CO) trustee for the Eagle County Ham

Operators 146.61 MHz repeater system has been asked to explain the voice and digital pages that are output over his system. "This may be due to intermodulation with a commercial paging transmitter." Reportedly there have been numerous complaints but no action taken. He was asked to respond within 20 days.

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SPACE STATION ALPHA GETS A NEW HAM CALL SIGN

By Miles Mann WF1F, MAREX-NA
Manned Amateur Radio Experiment, North American Division

The International Space Station ALPHA is keeping the international flair by hosting several amateur radio call signs from around the world. So far the ISS ALPHA has four calls signs from three different countries, Russia, USA and Germany.

Also each of the crew members of Expedition 1, has their own personal Amateur Radio call sign. Expedition commander, William Shepherd is KD5GSLk and flight engineer Sergei Krikalev, U5MIR. Soyuz commander Yuri Gidzenko's call sign is not known.

The newest call sign is now R0ISS. The new call sign will become the official call sign of the Space station. You can expect the ISS crew to be using this call sign on both voice and packet operations. The new Club call sign was issued by the Russian government on December 12, 2000. Other call signs used are RZ3DZR / R0ISS, NA1SS, DL0ISS and ALPHA.

Ground Station Link

What will you need to hear the ISS ALPHA Amateur Radio 2-meter Station? That's a tricky question because there are good orbit pass and poor low orbit passes. On a good 45 degree orbit pass, since the ISS ALPHA is only 250 miles high, you will be able to hear the 2-meter signal from the space station with a very small antenna (0 dBd to minus 12 dBd -- such as. a rubber duck antenna.) During a very low orbit passes under 20 degrees you may need a much larger, more sensitive antenna.

The Amateur Radio station on ISS ALPHA will be transmitting in the satellite 2-meter band (between 144.000 - 146.000 MHz). See the frequency chart below.

The ISS ALPHA transmitter power output is approximately 3 watts, into a pair of co-phased vertical antennas rated at minus 3 dBd. There is one antenna on each side of the ISS Service Module. Both antennas are then connected to a power divider to split the transmit power evenly between the two antennas. The co-phased installation provides a good transmit and receive pattern, with very little blocking of the signals by the bulk of the space station its self.

This combination of power and antenna gain will provide an ERP rating of approximately 1.5 watts. The 1.5-watt value is not that bad; many stations have reported hearing the ISS crew talking to pre-arranged schools with the ISS Amateur Radio station and the signal reports were very good.

If you only have a zero dBd gain antenna and a police scanner you will still be able to hear the ISS ALPHA on some good orbits. I have even heard ISS with a HT and a rubber duck which is not recommended for quality

reception.

Suggested receiving station

For casual listening to ISS ALPHA you will need a 2-meter vertical or scanner antenna (0 dBd or better) and a police scanner or amateur radio with the ability to receive in the 144 - 146 MHz range, FM mode. Antenna cable should be a low loss RG-8 style cable less than 100 feet long (RG-213 is best).

You will not need to mount the antenna very high, just try to get above the roof ridgeline. And of course you will need to find or buy a satellite tracking program. I recommend the "InstantTrack 1.5." It's a simple easy-to-use program which can be purchased from AMSAT at <<http://www.amsat.org/amsat/instanttrack/>> The frequencies for ISS ALPHA are posted at: <<http://spaceflight.nasa.gov/station/reference/radio/>>.

Worldwide downlink for voice and packet:	145.800 MHz.
Worldwide packet uplink:	145.990 MHz.
Region 1 voice uplink:	145.200 MHz.
Region 2 & 3 voice uplink:	144.490 MHz.

You will need to dig out the manual for your radio and program in the following frequency combinations. The channels listed below will help you compensate for the speed of the space station, called Doppler. I recommend you program in all channels, no matter what part of the world you live in. (The World Map ISS ALPHA location display used by the ISS ALPHA crew is not located next to the Amateur Radio station.)

Voice operations Region 2 & 3

(North and South America and Pacific)

Channel	Receive	Transmit	Offset (Meg)
1	145.802.5	144.488.5	-1.314
2	145.800.0	144.490.0	-1.310
3	145.798.5	144.492.5	-1.306

Packet operations Regions 1, 2 & 3

(Europe, North and South America and Pacific)

Channel	Receive	Transmit	Offset (Meg)
4	145.802.5	145.988.5	+0.186
5	145.800.0	145.990.0	+0.190
6	145.798.5	145.992.5	+0.194

Voice operations Region 1 (Europe)

Channel	Receive	Transmit	Offset (Meg)
7	145.802.5	145.198.5	-0.604
8	145.800.0	145.200.0	-0.600
9	145.798.5	145.202.5	-0.596

The QSL procedure for ISS ALPHA is still under development, please check the AIRSS web pages for the latest updates and ISA ALPHA QSL information at: <<http://airss.gsfc.nasa.gov/>>